

Model Number

MLV12-54-LAS/76b/110/124

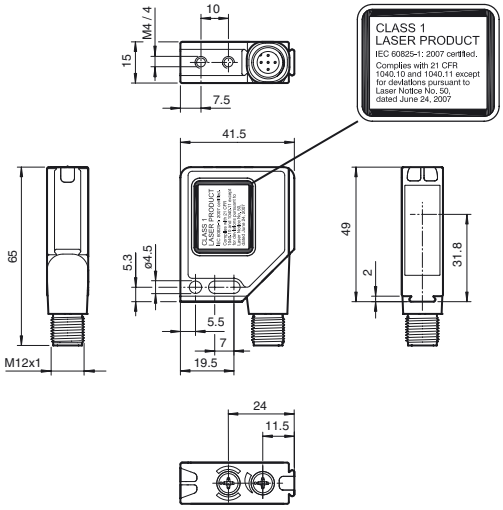
Retroreflective sensor

with metal connector M12; 5-pin, 90° convertible

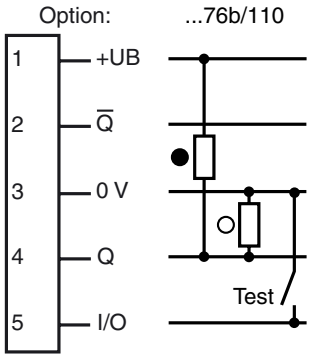
Features

- Series of sensors in a widely used standard housing
- Visible red light, pulsed LASER light
- Precision: high degree of repeatability thanks to small light spot
- Objects can be reliably detected down to 0 mm: no blind zone
- Resistant against noise: reliable operation under all conditions
- High level of stability thanks to the metal housing frame

Dimensions

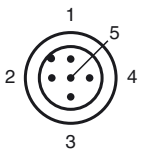


Electrical connection

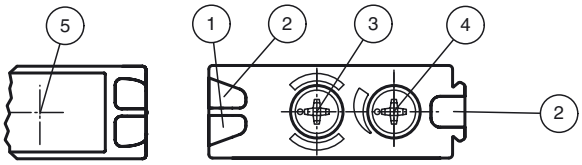


○ = Light on
● = Dark on

Pinout



Indicators/operating means



1	Operating display green
2	Switch state yellow
3	Bright/dark switch
4	Potentiometer
5	Optical axis

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Technical data

General specifications		
Effective detection range		0 ... 15 m
Reflector distance		0 ... 15 m
Threshold detection range		21 m
Reference target		MH82 reflector
Light source		laser diode
Light type		modulated visible red light
Laser nominal ratings		
Note		LASER LIGHT , DO NOT STARE INTO BEAM
Laser class		1
Wave length		650 nm
Beam divergence		< 1.5 mrad
Pulse length		1.8 µs
Repetition rate		17.86 kHz
max. pulse energy		6.7 nJ
Diameter of the light spot		approx. 5 mm x 12 mm at 15 m detection range
Angle of divergence		0.02 °
Ambient light limit		
Continuous light		50000 Lux
Modulated light		5000 Lux
Functional safety related parameters		
$MTTF_d$		930 a
Mission Time (T_M)		10 a
Diagnostic Coverage (DC)		90 %
Indicators/operating means		
Operating display		LED green, flashes in case of short-circuit
Function display		2 LEDs yellow, light up when light beam is free, flash when falling short of the stability control, off when light beam is interrupted
Controls		rotary switch for light/dark, sensitivity adjuster
Electrical specifications		
Operating voltage	U_B	10 ... 30 V DC
Ripple		max. 10 %
No-load supply current	I_0	max. 40 mA
Input		
Test input		emitter deactivation at 0 V
Output		
Switching type		light/dark on switchable
Signal output		1 push-pull (4 in 1) output, short-circuit protected, reverse polarity protected
Switching voltage		max. 30 V DC
Switching current		max. 0.1 A
Voltage drop	U_d	≤ 2.5 V DC
Switching frequency	f	2500 Hz
Response time		0.2 ms
Ambient conditions		
Ambient temperature		-10 ... 50 °C (14 ... 122 °F)
Storage temperature		-20 ... 65 °C (-4 ... 149 °F)
Mechanical specifications		
Protection degree		IP67
Connection		Metal connector, M12, 5-pin, 90° rotatable
Material		
Housing		Frame: nickel plated, die cast zinc, Laterals: glass-fiber reinforced plastic PC
Optical face		Plastic pane
Mass		60 g
Compliance with standards and directives		
Standard conformity		
Product standard		EN 60947-5-2:2007 IEC 60947-5-2:2007
Shock and impact resistance		IEC / EN 60068. half-sine, 40 g in each X, Y and Z directions
Vibration resistance		IEC / EN 60068-2-6. Sinus. 10 -150 Hz, 5 g in each X, Y and Z directions
Laser class		IEC 60825-1:2007 Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007
Approvals and certificates		
Protection class		II, rated voltage ≤ 300 V AC with pollution degree 1-2 according to IEC 60664-1
UL approval		cULus Listed, Type 1 enclosure
CCC approval		CCC approval / marking not required for products rated ≤36 V

Accessories

OMH-MLV12-HWG
Mounting bracket for series MLV12 sensors

OMH-MLV12-HWK
Mounting bracket for series MLV12 sensors

OMH-K01
dove tail mounting clamp

OMH-K02
dove tail mounting clamp

OMH-K03
dove tail mounting clamp

OMH-01
Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm

OMH-06
Mounting aid for round steel ø 12 mm or sheet 1.5 mm ... 3 mm

REF-MH82
Reflector with Micro-structure, rectangular 82 mm x 60 mm, mounting holes

REF-MH50
Reflector with Micro-structure, rectangular 50.9 mm x 50.9 mm, mounting holes, fixing strap

REF-MH78
Reflector with Micro-structure, hexagonal 78 mm x 61 mm, mounting holes

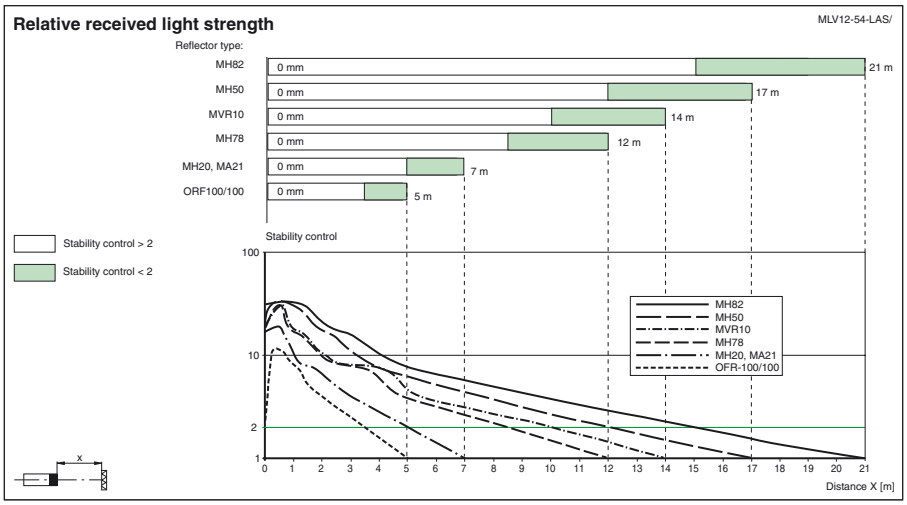
REF-MH20
Reflector with Micro-structure, rectangular 32 mm x 20 mm, mounting holes

REF-MA21
Reflector with Micro-structure, round ø 21 mm, self-adhesive

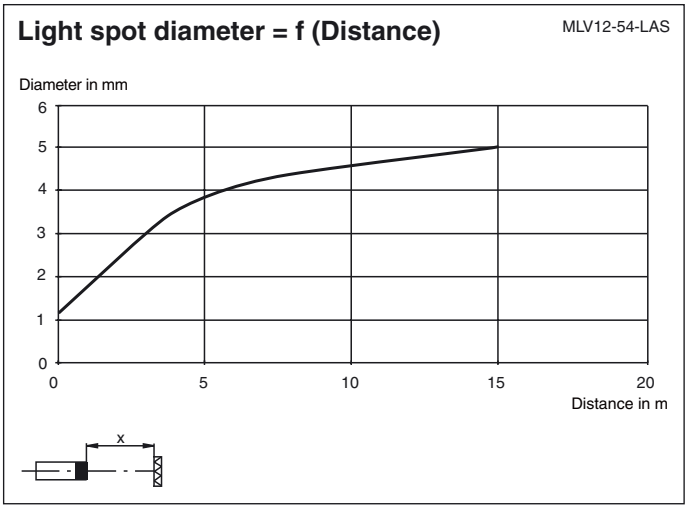
Other suitable accessories can be found at www.pepperl-fuchs.com

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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".
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PEPPERL+FUCHS SENSING YOUR NEEDS



Curves/Diagrams



Laser notice laser class 1

- The irradiation can lead to irritation especially in a dark environment. Do not point at people!
- Maintenance and repairs should only be carried out by authorized service personnel!
- Attach the device so that the warning is clearly visible and readable.
- The warning accompanies the device and should be attached in immediate proximity to the device.
- Caution – Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

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